CLEAN VERSION OF ENTIRE SET OF PENDING CLAIMS

81. (AMENDED) A modified human thyroid stimulating hormone (TSH), which differs from the wild-type human TSH, said modified human TSH comprising an α-subunit and a β-subunit, said α-subunit comprising at least three basic amino acids in the α-subunit at positions selected from the group consisting of positions 11, 13, 14,16, 17, and 20, wherein by human is meant the number of amino acid substitutions in the wild-type sequence does not exceed one-half the number of amino acid differences at corresponding positions in the TSH subunits between human and bovine species.

82. (PENDING) The modified human TSH of Claim 81, said α-subunit further comprising a fourth basic amino acid at a position selected from the group consisting of positions 11, 13, 14, 16, 17, and 20.

83. (PENDING) The modified human TSH of Claim 82, wherein said basic amino acids of the α-subunit are at positions 11, 13, 16, and 20.

84. (PENDING) The modified human TSH of Claim 82, wherein said basic amino acids of the α-subunit are at positions 11, 13, 17, and 20.

85. (PENDING) The modified human TSH of Claim 82, wherein said basic amino acids of the α-subunit are at positions 13, 14, 16, and 20.

86. (PENDING) The modified human TSH of Claim 82, wherein said basic amino acids of the α-subunit are at positions 13, 14, 17, and 20.

87. (PENDING) The modified human TSH of Claim 82, said α-subunit further comprising a fifth basic amino acid at a position selected from the group consisting of positions 11, 13, 14, 16, 17, and 20.

88. (PENDING) The modified human TSH of Claim 87, wherein said basic amino acids of the α-subunit are at positions 13, 14, 16, 17, and 20.

89. (PENDING) The modified human TSH of Claim 87, wherein said basic amino acids of the α-subunit are at positions 11,13, 14, 16, and 20.

90. (PENDING) The modified human TSH of Claim 81, wherein said basic amino acids of the α-subunit are at positions 11, 13, 14, 16, 17, and 20.

91. (PENDING) The modified human TSH of Claim 81, wherein said basic amino acids of the α-subunit are at positions 13, 16, and 20.

92. (PENDING) The modified human TSH of Claim 81, further modified so that said β-subunit comprises a basic amino acid in the β-subunit in at least one position selected from the group consisting of positions 58, 63, and 69.

93. (PENDING) The modified human TSH of Claim 92, wherein said basic amino acids of the β-subunit are at positions 58, 63, and 69.

94. (PENDING) The modified human TSH of Claim 92, wherein a basic amino acid of the β-subunit is at position 58.

95. (PENDING) The modified human TSH of Claim 92, wherein a basic amino acid of the β-subunit is at position 63.

96. (PENDING) The modified human TSH of Claim 92, wherein a basic amino acid of the β-subunit is at position 69.

97. (PENDING) The modified human TSH of Claim 81, wherein said basic amino acids are selected from the group consisting of lysine and arginine.

98. (PENDING) A nucleic acid encoding the modified human TSH α-subunit of Claim 81.

99. (PENDING) A vector comprising the nucleic acid of Claim 98, wherein the vector is suitable for expressing the nucleic acid.

100. (PENDING) A host cell comprising the vector of Claim 99, wherein the host cell is suitable for expressing the nucleic acid.

101. (PENDING) The modified human TSH of Claim 81, further modified so that said modified human TSH has less than five amino acid substitutions in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

102. (PENDING) The modified human TSH of Claim 81, further modified so that said modified human TSH has less than four amino acid substitutions in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

103. (PENDING) The modified human TSH of Claim 81, further modified so that said modified human TSH has less than three amino acid substitutions in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

104. (PENDING) The modified human TSH of Claim 81, further modified so that said modified human TSH has less than two amino acid substitutions in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

105. (PENDING) The modified human TSH of Claim 81, wherein further modified so that said modified human TSH has complete amino acid sequence identity with the corresponding wild-type human TSH in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

106. (AMENDED) A modified human thyroid stimulating hormone (TSH), which differs from the wild-type human TSH, said modified human TSH comprising an α-subunit and a β-subunit, said α-subunit comprising a basic amino acid in the α-subunit in at least one position selected from the group consisting of positions 11, 13, 14,16, 17, and 20, wherein by human is meant the number of amino acid substitutions in the wild-type sequence does not exceed one-half the number of amino acid differences at corresponding positions in the TSH subunits between human and bovine species.

107. (PENDING) The modified human TSH of Claim 106, wherein a basic amino acid of the α-subunit is at position 11.

108. (PENDING) The modified human TSH of Claim 106, wherein a basic amino acid of the α-subunit is at position 13.

109. (PENDING) The modified human TSH of Claim 106, wherein a basic amino acid of the α-subunit is at position 14.

110. (PENDING) The modified human TSH of Claim 106, wherein a basic amino acid of the α-subunit is at position 16.

111. (PENDING) The modified human TSH of Claim 106, wherein a basic amino acid of the α-subunit is at position 17.

112. (PENDING) The modified human TSH of Claim 106, wherein a basic amino acid of the α-subunit is at position 20.

113. (PENDING) The modified human TSH of Claim 106, wherein said basic amino acid is selected from the group consisting of lysine and arginine

114. (PENDING) The modified human TSH of Claim 106, further modified so that said α-subunit comprises a basic amino acid in at least two positions selected from the group consisting of positions 11, 13, 14,16, 17, and 20.

115. (PENDING) The modified human TSH of Claim 114, wherein said basic amino acids of the α-subunit are at positions 16 and 20.

116. (PENDING) The modified human TSH of Claim 114, wherein said basic amino acids of the α-subunit are at positions 16 and 13.

117. (PENDING) The modified human TSH of Claim 114, wherein said basic amino acids of the α-subunit are at positions 20 and 13.

118. (PENDING) The modified human TSH of Claim 114, wherein said basic amino acid is selected from the group consisting of lysine and arginine.

119. (PENDING) The modified human TSH of Claim 106, further modified so that said β-subunit further comprises a basic amino acid in the β-subunit in at least one position selected from the group consisting of positions 58, 63, and 69.

120. (PENDING) The modified human TSH of Claim 119, wherein said basic amino acids of the β-subunit are at positions 58, 63, and 69.

121. (PENDING) The modified human TSH of Claim 119, wherein a basic amino acid of the β-subunit is at position 58.

122. (PENDING) The modified human TSH of Claim 119, wherein a basic amino acid of the β-subunit is at position 63.

123. (PENDING) The modified human TSH of Claim 119, wherein a basic amino acid of the β-subunit is at position 69.

124. (PENDING) A nucleic acid encoding the modified human TSH α-subunit of Claim 106.

125. (PENDING) A vector comprising the nucleic acid of Claim124, wherein the vector is suitable for expressing the nucleic acid.

126. (PENDING) A host cell comprising the vector of Claim 125, wherein the host cell is suitable for expressing the nucleic acid.

127. (PENDING) The modified human TSH of Claim 106, further modified so that said modified human TSH has less than five amino acid substitutions in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

128. (PENDING) The modified human TSH of Claim 106, further modified so that said modified human TSH has less than four amino acid substitutions in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

129. (PENDING) The modified human TSH of Claim 106, further modified so that said modified human TSH has less than three amino acid substitutions in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

130. (PENDING) The modified human TSH of Claim 106, further modified so that said modified human TSH has less than two amino acid substitutions in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

131. (PENDING) The modified human TSH of Claim 106, further modified so that said modified human TSH has complete amino acid sequence identity with the corresponding wild-type human TSH in said α-subunit in positions other than positions 11, 13, 14, 16, 17, and 20.

52 132. (AMENDED) A modified human thyroid stimulating hormone (TSH), which differs from the wild-type human TSH, said modified human TSH comprising an α-subunit and a β-subunit, said β-subunit comprising a basic amino acid in the β-subunit in at least one position selected from the group consisting of positions 58, 63, and 69, wherein by human is meant the number of amino acid substitutions in the wild-type sequence does not exceed one-half the number of amino acid differences at corresponding positions in the TSH subunits between human and bovine species.

133. (PENDING) The modified human TSH of Claim 132, wherein said basic amino acids of the β-subunit are at positions 58, 63, and 69.

134. (PENDING) The modified human TSH of Claim 132, wherein a basic amino acid of the β-subunit is at position 58.

135. (PENDING) The modified human TSH of Claim 132, wherein a basic amino acid of the β-subunit is at position 63.

136. (PENDING) The modified human TSH of Claim 132, wherein a basic amino acid of the β-subunit is at position 69.

137. (PENDING) The modified human TSH of Claim 132, wherein said basic amino acids are selected from the group consisting of lysine and arginine.

138. (PENDING) A nucleic acid encoding the modified human thyroid stimulating hormone (TSH) β-subunit of Claim 132.

139. (PENDING) A vector comprising the nucleic acid of Claim 138, wherein the vector is suitable for expressing the nucleic acid.

140. (PENDING) A host cell comprising the vector of Claim 139, wherein the host cell is suitable for expressing the nucleic acid.

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